Hydro-stonE

The Superior Building Unit

Gold Medal Awarded Hydro-Stone at St. Louis Exposition.

Foreword

THIS booklet has been prepared not only to tell and show you something of the success Hydro-Stone has achieved in all classes of building construction, but also to give you a glimpse of the great possibilities of the Hydro-Stone System.

From the hundreds of testimonials and photographs of buildings erected of Hydro-Stone, we have selected for this booklet a few which cover a considerable range of building construction work.

We therefore trust that, in the perusal of these pages, you will find that Hydro-Stone has a great message of beauty and sterling usefulness for *you.*

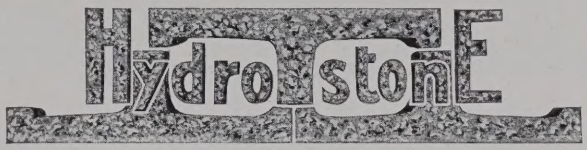
Hydro-Stone is the only true concrete building unit, in the making of which it is possible to use *great pressure,* a *wet* aggregate and any desired natural facing material.

Hydro-Stone units are made in standard or other sizes necessary to build walls of any required thicknesses.

All features are protected by patents

HYDRO-STONE COMPANY
Second Floor Insurance Exchange Bldg.
Chicago

HYDRO-STONE CO.
15 E. Van Buren St,
CHICAGO, ILL.



Hydro-Stone consists of a correct mixture of concrete, composed of gravel, crushed stone, sand and Portland cement, with sufficient water to crystallize the cement thoroughly; molded under heavy pressure into the form of building units, and then cured in steam or rooms kept moist, to prevent rapid evaporation.

The heavy pressure admits of the use of a sufficiently wet mix to form a high grade concrete, and the system of molding admits of facing with crushed granite, marble, mica-spar or colored sands.

The superiority of Hydro-Stone over ordinary so-called concrete blocks, which are really only mortar blocks, is due to the above described methods of manufacture.

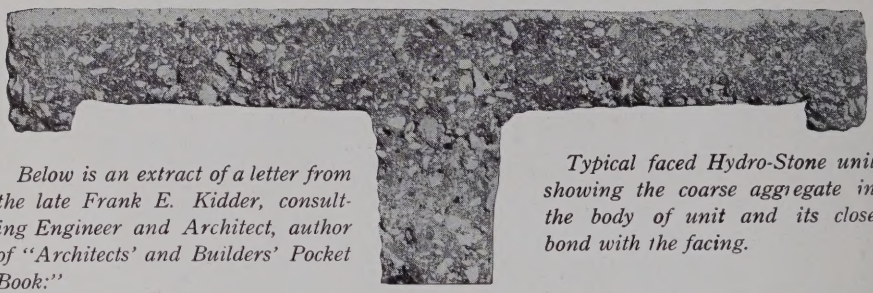
In addition to the fact that Hydro-Stone is a real concrete building unit, the various shapes and sizes in which it can be molded makes possible the Hydro-Stone system of construction which can be adapted with great advantage and profit to each and every type of building.

The Architectual and Engineering advantages are proved by the buildings which have already been erected. These buildings have stood every test and demonstrate the success of Hydro-Stone.

We wish to present to the man now engaged in the manufacture of concrete products or about to enter it, the only system of manufacture and construction which meets with ready favor at the hands of architects, engineers and builders for all classes of work.

Our machines for making the units are so simple, practical and efficient that hand labor is almost eliminated. Each machine will turn out a sufficient quantity of units to make the cost per block small as compared with other building materials.

A careful reading of these pages will show you that Hydro-Stone is a profitable, safe, conservative business for you to engage in.



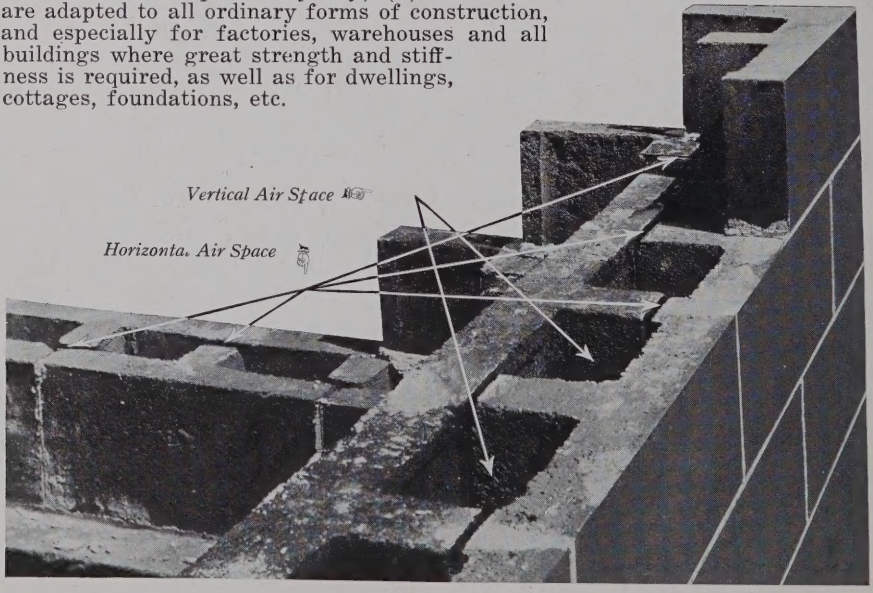
Typical faced Hydro-Stone unit showing the coarse aggregate in the body of unit and its close bond with the facing.

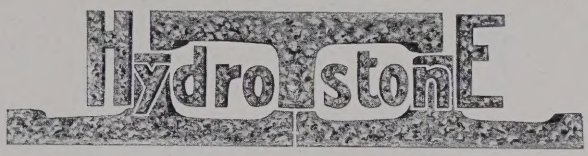
Below is an extract of a letter from the late Frank E. Kidder, consulting Engineer and Architect, author of "Architects' and Builders' Pocket Book:"

"Gentlemen: You request my opinion, for publication, as to the value of your two-piece wall for building purposes. I have no hesitation in saying that I consider your wall superior to any other cement block construction now on the market, as well as to ordinary brick or stone walls.

"The great advantages of your construction are: (1) the manner in which the blocks are molded, enabling them to be turned out more rapidly and at less expense than any hollow block of the same proportions; (2) ability to use coarse, wet concrete for the body of the block, facing it with a quarter inch of fine face matter of any desired texture or color, thus making a dense, hard stone that is much stronger and more impervious than can be made under any hand tamped process, in which it is necessary to use fine material comparatively dry; (3) the blocks are adapted to all ordinary forms of construction, and especially for factories, warehouses and all buildings where great strength and stiffness is required, as well as for dwellings, cottages, foundations, etc.

The typical two-piece wall shown below is formed by "T" shaped units so laid that each unit forms a header and stretcher bond, producing a wall of greater lateral strength than can be had with any other unit masonry construction. It has been found that a 10-in. Hydro-Stone wall is as stiff and strong as a 17-in. solid brick wall.





Simplicity, the Keynote of Hydro-Stone Manufacture

Machinery for the manufacture of Hydro-Stone consists of a simple, strongly built, double-end or single end press, applying pressure through heavy compound toggles; together with *mold boxes, cores* for the various shaped units of this construction; *fillers* and *dividers* to use with cores to secure various thicknesses and sizes of blocks; *pressing plates* for making bevel, tooled and other special faces. This equipment is built with the idea of simplicity, strength, elasticity of adjustment and rapidity of operation.

Pressure is the Secret of Hydro-Stone Excellence

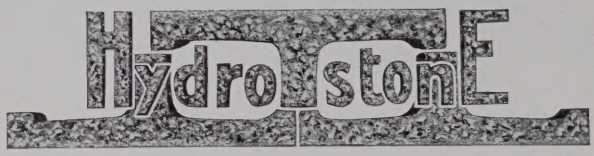
Operation of the compound toggles applies 150,000 lbs. pressure against face of block while in the mold. This compacts the wet concrete, squeezes out excess water, fills up the voids and quickly forms a block with perfect, dense face, and square, sharp edges which is immediately removed from the mold.

Molds and Adjustments are Simple

Mold boxes are made stiff and strong to withstand the heavy pressure. Cores are furnished for making main wall, corner, half, jamb and double web blocks and veneer slabs, which go to make up this wonderfully elastic construction system. Fillers used with these cores vary the dimensions of face and webs to fit requirements. With this equipment can be made 4½ in., 6 in., 8 in., 10 in., 12 in., 14 in., 16 in., 17 in., and heavier walls in 9 in. and 12 in. high courses. Any type of block for any size of building may thus be constructed.

A Quaky Wet Mix Makes the Best Block

The machine operates best when the ideal concrete mixture is used. This should consist of stone or gravel up to one inch with good, clean, sharp sand and any of the standard brands of Portland cement in proportions averaging, 1-2-3, 1-2½-3½ or 1-3-4, depending upon the size and quality of materials and the class of work to be done. Enough water is used to produce a medium wet mix, assuring complete crystallization of the cement, the strongest possible concrete and an exceedingly low rate of absorption. The use of large aggregate means better concrete at less cost.



How the Facing is Applied

Blocks with facings of innumerable color and texture effects, rivaling in beauty and life the most beautiful natural stones are produced simply and at low cost with this system. In this work various sizes of screenings of granite, marble, quartz, micaspar, etc., with gray or white Portland cement, are mixed in proportions of 1-2 to 1-4, according to the effect desired. These faces made wet are impervious without waterproofing. Hydro-Stone will compare very favorably with the highest types of other materials in the most monumental buildings.

Face Effects

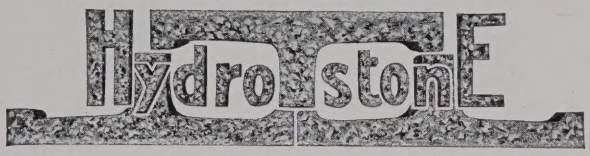
Faces of the texture of Bedford or sandstone are produced by application of a 1-2 mixture of cement and bank sand, marble sand or granite sand. Being formed against a steel plate under pressure, the face is absolutely true and dense. For producing these faces with bevel edges or horizontal or vertical tooling, special steel pressing plates are furnished. Any facing is easily handled because the blocks are made face up and released from the mold face down.

Blocks with no other face effect than secured through the use of coarse wet materials makes an exceedingly satisfactory wall for factories, locomotive shops, power houses, etc.; a wall of more pleasing appearance than any other material commonly used in such construction.

Facing Operations Simple. Beautiful Results Obtained at Low Cost

Where block is to be faced, box is filled to within a quarter or half inch of top. Mixed facing material is added to this thickness, when operation is continued as above. The pressure applied against the face assures density and a thorough bond between face and body of block. If facing for smooth block is used, block remains on pallet as removed from mold until hard enough to place in yard. When facing aggregate is to be exposed the blocks are removed from pallets after about twenty-four hours and washed with fibre brush and water, quickly removing the film of cement and leaving only the beauty of the granite, marble or micaspar. Ours is the only system with which this is practical.

The simplicity of the whole operation and its low cost is out of all comparison with the beautiful and practical results obtained.



Daily Capacity Depends on size of Crew

The double-end press can be operated from either end or from both ends at the same time, and molds are so furnished. The crew may consist of from two to six men according to the required capacity. A full crew will make from eight hundred to one thousand full length blocks per day. Blocks for thick walls are turned out as rapidly as those for thin walls.

Hydro-Stone Sizes Varied to Suit the User

Standard sizes of Hydro-Stone units are 9x24 in. and 12x24 in., including mortar joint, and of thickness required for any width of wall. By special dividers and cutoff blocks these dimensions are readily modified. These good architectural sizes are practical only with Hydro-Stone. Because of its two-piece construction, no unit, even for widest wall is too heavy for one man to handle.

May be Cured by Steam or Sprinkling

Hydro-Stone is cured either by sprinkling or by steam. Blocks can be set from machine on racks or cars. The fact that Hydro-Stone is made wet, furnishing sufficient water for thorough crystallization of the cement, makes steam curing practical and economical.

One Machine Makes Blocks and Trim

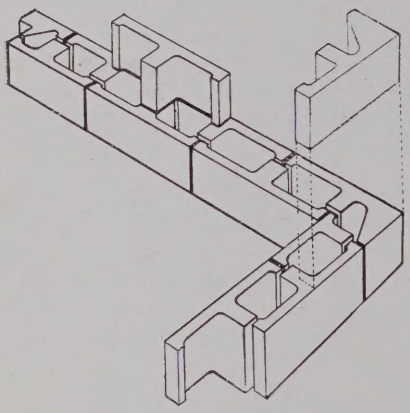
Besides making varying heights of courses and varying widths of wall for all types of buildings, the press can be used for making veneer slabs of any thickness, water table, belt, sill or lintel course units and other architectural trim members of any design that will release without undercut. It is only necessary to supply forms to fit the mold boxes to make any of these.

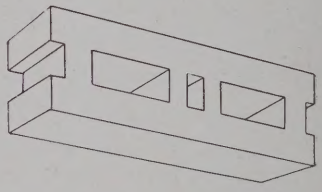
Hydro-Stone Walls are Laid Up Quickly

Hydro-Stone costs less to lay than any other type of masonry. It is laid to line and only one face requires attention at a time, the vertical face being plumbed merely by adjusting the mortar under center web. Mortar can be made of proper consistency for best working because the block, being impervious, does not rob the mortar of its moisture before it is bedded. Blocks for thickest walls are easily handled by one man. Rapidity of construction with Hydro-Stone may be realized from the fact that a single 9x24 in. block for 12 in. wall is equivalent to three quarters of a cubic foot of wall, or 17 brick.

Hydro Stone

A Comparison





Hydro-Stone Two-Piece System

vs.

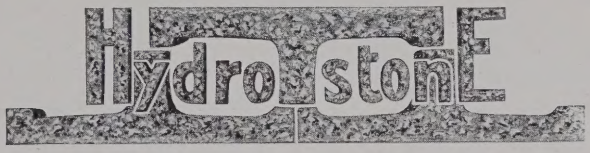
All Hand Tamped Processes

Labor

Our new and improved machinery is so nearly automatic that labor is almost eliminated; it being necessary only to fill the mould box, to apply pressure and to carry away the block.

All one-piece blocks are made in molds which are substantially boxes, with appliances for removing cores and opening sides. As they can not be made under pressure a very large amount of hand labor is involved in tamping them thoroughly and poor blocks result.

NOTE.—Only slightly more cement is required to coat a stone one inch in diameter than to coat a grain of sand. How many grains of sand would be required to make material equal to a stone one inch in diameter? Therefore, one part of cement to ten parts of proper concrete material makes stronger stone than one cement to three sand. How much cement is saved by our two-piece system?



Consolidating the Material

Heavy Pressure

Using wet material under great pressure produces uniformly strong and dense stone showing water flushed to the surface.

Tamping

Tamping in one place displaces adjoining material already tamped. Uniform strength and density can not be obtained by tamping other than wet concrete.

Material

Stones going through an inch screen, with enough graduated smaller material to thoroughly fill voids. For fine exterior work a quarter inch facing of fine sand and cement is used, and both the body and face pressed at one time under 100,000 pounds pressure.

Sand without sufficient moisture to cause proper crystallization must be used in making blocks by the one-piece system.

Moisture

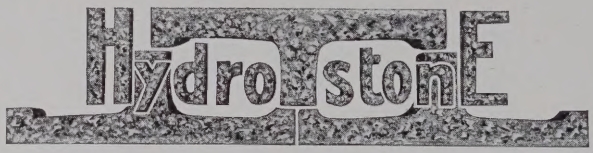
The United States and all other government specifications provide that when concrete is tamped or pressed, free water shall flush to the surface. Hydro-Stone complies with above specification; consequently, stone is produced, and when broken, the pieces of natural stone in the concrete break with the cement.

In the one-piece systems comparatively dry sand must be used to prevent sloughing of blocks when cores are withdrawn. Such a mixture is dependent upon subsequent care for crystallization, which can never be complete without sufficient water in the initial set, which it is impossible to give. The result is a weak and porous block, neither fire nor water-proof.

Wet Walls

The Hydro-Stone system embraces two walls, an outer and an inner, a space being left between the end of webs, forming a continuous horizontal air chamber, through which moisture can not

Capillary attraction always carries moisture through the porous mixture described, and, as the webs extend through the wall, it is impossible to build a wall so that moisture will not reach the interior,



pass. This gives an absolutely dry wall, to which plaster or decorations may be applied without furring, and a building in which one may live without danger to health.

ruining decorations and rendering the building unsanitary. Such a wall carries moisture on the inside for days after a severe storm.

Bond

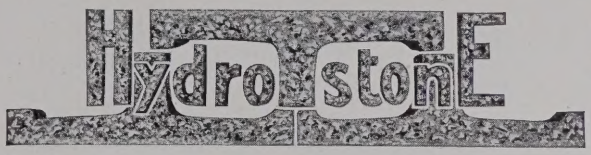
The Hydro-Stone system gives strongest bond known to masonry construction—a header bond every seven inches in the horizontal and every nine inches in the vertical. The heavier the load on such a wall, the greater its lateral strength.

No header bond obtains in any one-piece wall. The more such a wall is loaded, the less is its lateral strength and the greater the liability to buckle. If you were to build a brick wall eight inches thick, laying the bricks end to end, two courses wide, in cement mortar, *without a header course,* you would have a wall of greater strength than a one-piece eight-inch wall. Could you persuade any architect or builder to lay a brick wall without a header course every 12 to 15 inches? Ask them.

Strength

Tests of single blocks, 21 days old, 12-inchx24-inch for 12-inch wall, set on edge on a plank and unsupported in any way, were made at the Allis-Chalmers works, Milwaukee, showing a crushing strength of 2,600 lbs. per square inch. The blocks for the test were selected at random by a committee, from those made for the National Electric Co. (Milwaukee) office building.

Not to our knowledge has a one-piece block, commercially made, ever withstood a test exceeding 1,280 lbs. per square inch, and the large majority of those tested have broken at about one-half that pressure.



Facing

In Hydro-Stone, where a block is to be faced, the mold is filled with a correct mixture of concrete, a quarter of an inch is raked out of the top of the mold and this space filled with face matter mixed one to two and a half or one to three of fine sand and cement. The entire mass is then compressed at once, giving a hard and beautiful face of great density, which will never crack or peel off, as is the case with faces troweled on after the block is made.

In the manufacture of one-piece blocks the difficulty of applying any facing whatsoever is so great that nearly all makers use and advocate the use of the same material throughout the block.

Width of Walls

With Hydro-Stone you make any width of wall from 5¾ inches up to 50 feet.

Usual width of one-piece wall 8 inches. Not practical less than 8 inches or more than 10 inches, although 12-inch blocks are made, but the weight is excessive.

Air Space

Hydro-Stone walls have fifty per cent. air space, increasing with greater width of walls; air chamber in the horizontal as well as the vertical.

Average one-piece walls contain from 25 per cent. to 33 per cent. air space, and can not safely be made otherwise, while a horizontal air chamber is an impossibility.

Weight

Average weight of our blocks, from 34 to 60 pounds, depending upon width of wall; easily handled by one man.

Average one-piece blocks weigh from 80 to 180 pounds, requiring two men and a lever to remove them from the mold, two men to load and unload in hauling, and a derrick to put them in the wall.

The Relative Strength of Wet and Dry Mixture

Extract from an article by James W. Sussex C. E., relative to the strength of wet and dry concrete, in the "Technograph," University of Illinois:

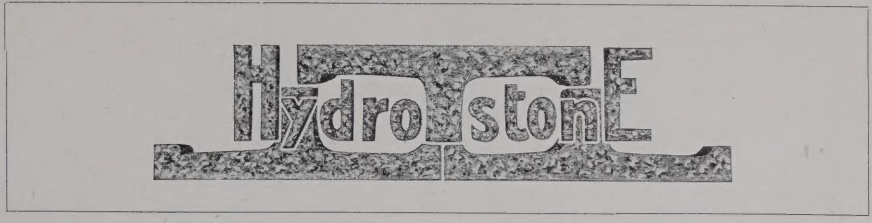
"Owing to the lack of data on the subject and to the importance of knowing the effect of a deficiency or an excess of water in concrete, the following experiments were made. Forty-five six-inch cubes were made with three percentages of water, and broken in a testing machine, at the ages of seven days, one month and three months. The amount of water used was: for dry concrete 6.0 per cent., for medium 7.8 and for wet 9.4. The ingredients used were as follows: Best Portland cement, sand containing a small percentage of fine gravel, and crushed limestone which would pass through a sieve with one-inch mesh. The constituents were mixed in the proportion of one volume of loose cement, three volumes of sand and six of broken stone.

"The plasticity of the concrete with the per cents of water was as follows: The dry concrete was about as moist as damp earth, and when squeezed in the hand would retain its shape, and when thoroughly tamped no free water would flush to the surface. The medium concrete was of such consistency that it would neither quake in handling nor when slightly tamped, and when well tamped, water would flush to the surface and the concrete would quake. The wet concrete quaked in handling and could be tamped only slightly. The wet and dry mixtures fairly represent the range in practice, while the medium concrete fulfills the common specifications that 'the concrete shall be of such consistency that water will flush to the surface when well tamped, but will not quake in handling.' "

The following table shows the crushing strength of the cubes at different ages. The ratio of strength is computed for each set of wet, dry and medium mixtures, having the same age and the same tamping, taking the medium concrete as unity in each case:

Crushing Strength of 6-inch Concrete Cubes.

Age	Elasticity	Average Crushing Strength in lbs.
7 Days	Dry	43,400
7 Days	Medium	82,400
7 Days	Very Wet	37,600
1 Month	Dry	63,000
1 Month	Medium	82,400
1 Month	Very Wet	80,300



"By using a rather wet mixture a compact mass can be obtained with comparatively little tamping, *while a dry mixture, on the other hand, does not make a compact mass with any amount of tamping.*

"There is no condition of age or amount of tamping which shows dry concrete to be the strongest.

"The conclusions of these experiments may be briefly stated as follows: *Dry concrete should never be used under any circumstances."*

Medium concrete is used in connection with the Hydro-Stone system, *Dry* concrete must be used with all hand-tamped processes.

Under the Hydro-Stone system gravel or broken stone may be used up to an inch screen, sufficient sand being mixed therewith to fill the voids. In general concrete work the attainment of greater strength by the use of coarse aggregates has been thoroughly demonstrated, and the reason for this is easily seen when one remembers that in thoroughly well-made concrete every particle of the aggregate must be thoroughly coated with cement. It is impossible in the use of fine aggregates to attain this result without the employment of an abnormal quantity of cement.

A Few Facts about the Hydro-Stone System

It builds the only commercially successful hollow concrete wall.

Each unit is made of true concrete under heavy pressure.

It gives properly bonded and absolutely dry walls.

Plaster may be applied directly to the interior.

Continuous horizontal air chamber, as well as vertical.

It is 50 per cent. hollow; others average 30 per cent.

It may be any thickness from 5¾ inches to 50 feet.

One man handles the block easily; no derrick required.

It is made and laid 50 per cent. faster than any other wall.

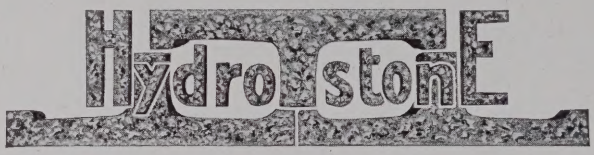
Three men at press (mixture supplied) make 1,200 blocks per ten-hour day.

It is covered with 19 United States patents, with 145 allowed claims; no law suits to purchasers.

Foreign patents in thirty-five countries.

It was the only hollow concrete wall granted a gold medal at St. Louis Exposition.

Not to our knowledge has ever an architect, engineer or practical builder given an unfavorable opinion of our system of construction.



Service Bureau

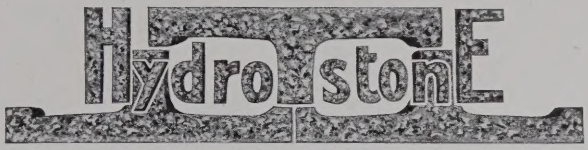
The Hydro-Stone Company has established at its central office an Engineering and Architectural Department which at all times is at the service of its subsidiary companies.

This Department is not intended to displace the services of the local engineer or architect, but to assist the manufacturers of Hydro-Stone in executing his designs.

It has been the experience of practically all companies manufacturing and selling finished materials for building purposes that the individual opinions and requirements must be met. In many cases this work will be of a somewhat specialized nature following the requirements and ideas of architects, and often of a character the subsidiary company will not have the talent and equipment for executing.

Such work handled by this Service Bureau, with a small charge for service, can be placed in the hands of the most highly trained experts, with far better and more uniform results than if it were left in the hands of a number of smaller organizations, each endeavoring to solve these problems in its own way.

This Service Bureau is ready at all times to help in laying out and executing special designs. This class of work will in this way get the benefit of the experience of all the companies. These advantages are so obvious they need not be mentioned. Under the auspices of the Service Bureau an advertising campaign will be conducted, setting forth the great advantages of Hydro-Stone as a building material. This advertising will be carried on in the trade journals, magazines, special articles, booklets, etc. It will be the object in the beginning to confine this advertising to the localities in which machines for the manufacture of Hydro-Stone have been installed. The greater part of this expense will be met by the Hydro-Stone Company, although the subsidiary companies will be asked to pay a very small sum on each thousand units made and sold, to help in this promotion work.



Service Bureau (Continued)

Through the Service Bureau we will be able to make each subsidiary company a success from the start, and avoid the many weeks of experimental work which almost always accompanies the entrance of a firm engaging in a new business. With this service to call upon, confidence would be created in the minds of both the architect and the builder, making it much easier for the manufacturer to sell his material.

We have in the files of this department many excellent photographs of completed jobs where Hydro-Stone was used. These photographs are of standard size, 8x10 inches, and have been taken by the best photographers. They will prove of great assistance in promotion work, and the bureau will be glad to supply prints of these photographs.

In order that the photograph files of the bureau may be kept up to date in all respects and replete with views of Hydro-Stone work we ask that all subsidiary companies supply the bureau with photographs showing their different jobs both in course of construction and as completed. These photographs should be taken on 8x10 inch negatives.

Strict adherence to this feature will insure an excellent supply of photographs of Hydro-Stone as it is being used in every line of modern building construction, on hand and available to all interested in its manufacture and promotion.

Further particulars of the service rendered by this Bureau gladly sent on request.

Residence at Mooseheart, Illinois, where the Loyal Order of Moose is spending a million dollars in constructing schools, dormitories, administration buildings, central dining hall, power house, printery and extensive farm buildings—ALL WITH HYDRO-STONE

Hydro-Stone Company,
Insurance Exchange Building,
Chicago, Illinois.

Gentlemen-

The news of more extended operations on behalf of Hydro-Stone pleases me particularly.

I have always felt that if the general public could be made to know the virtues of Hydro-Stone as a building material, it would largely supplant brick and natural stone.

The Committee which originally undertook the construction of this institution was prejudiced against any sort of concrete block, and the adoption of Hydro-Stone was against the natural prejudices of every member of the board. The material, however, answered all the scientific requirements so well, and had such a pleasing appearance, that the Governors could do nothing other than adopt it as our sole material for building construction.

So long as you can educate the makers of Hydro-Stone to an honest mixture with the proper proportion of the ingredients, the material will increase in general use.

If any future purchaser doubts the value of the material, let him visit Mooseheart where we have it in use in almost every conceivable test.

Very truly yours,
RODNEY H. BRANDON,
Secy-Treas.
Mooseheart, Illinois

RHB/HN.

THE use of Hydro-Stone in this church gives it a dignity, beauty and permanence not secured by any other material at anywhere near its cost.

The wall blocks of Hydro-Stone are faced with Wisconsin black granite screenings exposed by washing with water only and the trim work of Hydro-Stone is faced with white Portland cement and Wausau white quartz.

Entrance to Normal Park M. E. Church, Chicago, Ill.

Hydro-Stone Company
Insurance Exchange Building
Cnicago, Illinois

Gentlemen:-"I am aware of the possibilities of the material and feel that it has a distinct field in Architectual work in Chicago. I should give it favorable consideration on work passing through my office.

"The choice of building material is a problem intimately related to the nature of the work, the ideals of the architect and owners, and the sum to be expended. It is evident that the Hydro-Stone can be made in a sufficient variety of excellent faces applicable to most any design."

Respectfully yours,
(Sgd) H. B. WHEELOCK, Architect
President Illinois State Board of Architects.

The Power House of the Sanitary District of Chicago, at Lockport, Ill., where electricity is developed for the Chicago Street Lighting.

This building is 368 feet long, 64 feet wide, and 46 feet high from foundation to roof plate with no cross walls. The Hydro-Stone walls are 28 inches thick, 50 per cent. hollow with no reinforcement. This wall is 20 inches thinner than the engineer planned if other materials were to be used. These walls not only carry great weight, but withstand the vibration incident to thirty thousand horsepower of electricity. This wall stability is had with Hydro-Stone because of the header and stretcher bond principle involved in its construction.

Isham Randolph, formerly Chief Engineer of Sanitary District, and now Consulting Engineer, says:

"The materials to be used in this building were carefully considered and after full investigation I recommended the use of Hydro-Stone. These blocks were used with the results which have justified my recommendation. I then thought them the best concrete blocks I had seen and I have seen none since to change my opinion."

Hydro-Stone Stood this Severe Fire Test

The above illustration shows the Montgomery Building, Nashville, Tennessee, immediately after the fire which raged in this building, had been overcome.

The Montgomery Building, constructed of 16-inch walls (50% hollow) under the Hydro-Stone system, is occupied by a furniture factory, warehouse and salesrooms.

The following extract from "Rock Products" (a journal devoted to the natural stone industry) will prove of interest:

"The favorable test sustained by these blocks in an actual conflagration has resulted in this type of building construction being seriously considered by people contemplating the erection of similar buildings. Heretofore concrete blocks have been looked upon with suspicion if not with disfavor, but the result of this fire has proven that such blocks as used in this building at least possess qualities that are worthy of

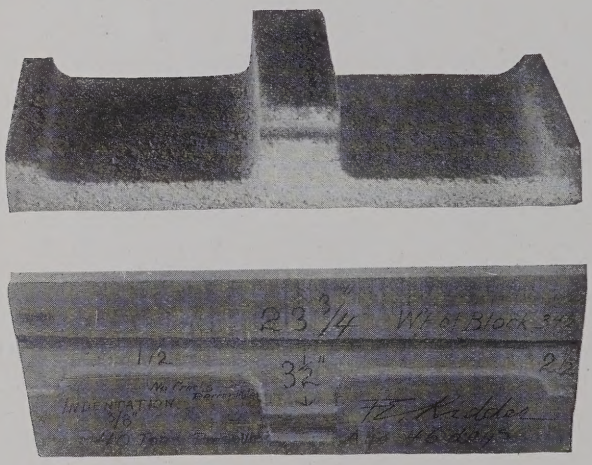
Continued on Page 20

being specified as fire-resisting building material of the first rank, which means that they will certainly be specified to a greater extent in the building operations of the future.

"At one time during the fire the upper walls of the building as well as the concrete ornamental cornice and top courses were almost at a white heat, at least they seemed to be transparent, but after the fire was over and the building was approachable, it was discovered that notwithstanding the great volumes of water poured upon the concrete wall while in such a heated condition, little or no damage had resulted except for a few chips in the sills of the windows and the blocks next adjacent to such openings. The walls were intact. The chipping of the blocks so exposed to the terriffic heat in direct contact with the flame for more than an hour is a mere triviality and can be repaired or replaced at slight expense.

"As a fire test upon concrete block, the results of such a conflagration are sufficient to demonstrate the splendid fire resisting qualities of concrete blocks made of the materials that were used in the construction of this building."

Hydro-Stone Stood this Crushing Test



"I hereby certify that I tested block for 8-inch wall, shown in accompanying cut, for compressive strength, March 21, 1903 The block was made of one part of cement to six parts sand and gravel, and was forty-six days old. The full capacity of the press, 80,000 pounds, or 1,600 pounds per square inch of concrete, was applied, and with this pressure the block showed no signs of crushing or cracking. This was not a fair test for the block, as it was simply set on edge on the Oregon pine board shown in above cut, and not supported in any way in the press. The block should have a much greater strength when built in a wall. Considering the weight of the block, 34½ pounds, this test shows that you could build a wall 1,700 feet high before the weight of the same would crush the under blocks."

F. E. KIDDER,
Consulting Engineer.

Indorsements of Hydro-Stone

Hydro-Stone Company,
Insurance Exchange Building,
Chicago, Illinois.

Gentlemen: After investigating the method of manufacturing Hydro-Stone, I can make the following statements;

STRENGTH: Relative to the crushing strength, there is no doubt whatever that your 14-inch hollow wall will stand much more than a 17-inch brick wall, and, for ordinary building purposes, a 10-inch wall sufficiently takes the place of the 17-inch brick wall.

LATERALS: Relative to the lateral strength, the section of wall I examined I found perfectly bonded with a bond equal to that of the best constructed brick wall and far superior to that of the ordinary brick wall with lime mortar. With the addition of concrete tamped into place in the hollow space of sections (say 16 feet apart), piers may be formed sufficient in strength for the construction of heavy buildings, such as warehouses, shops and factories.

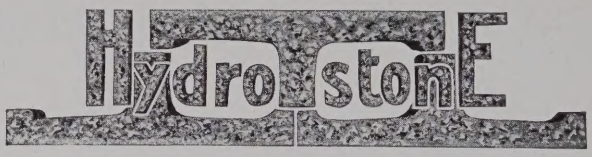
USES: This stone can be used to advantage in the construction of shops, warehouses, refrigerator plants, factories, and to a large extent in dwellings. Its uses in dwellings will, of course, depend upon the individual taste of the owner, but where expense is considered by the owner, the selection would be in favor of the stone, and it must be especially considered that a hollow wall will make a warmer house in winter and a cooler house in summer than any other method of construction. In certain parts of the country, especially in railroad construction work, stone or brick are not readily available, and a portable machine of your construction will solve all questions of excessive cost and allow the construction of a neater looking building than might otherwise be erected. I am also of the opinion that it can be used to advantage in retaining walls and culvert construction.

(Signed) H. W. COWAN, Chief Eng'r.
Colorado & Southern R. R. Co.

Hydro-Stone Company,
Insurance Exchange Building,
Chicago, Illinois.

Gentlemen:-The Hydro-Stone used in our machine shop at Joliet and our Y. M. C. A. building at Rossville, Illinois, has proved exceedingly satisfactory to us, and we would give preference to such construction in the erection of similar buildings.

Very truly yours,
(Sgd) A. F. BANKS, President,
Elgin, Joliet & Eastern Railway Company,
Chicago.



The Manufacture of Hydro-Stone Offers You an Excellent Business

Throughout the foregoing pages we have attempted to show you Hydro-Stone as a very superior material for all kinds of construction, from the modest cottage to the stately home of wealth—for the finest business building or for factory uses.

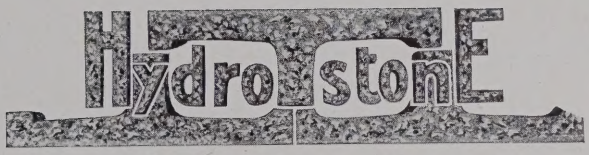
It is our desire to license the manufacture of this material in a number of localities in the United States, furnishing the machinery for the making of Hydro-Stone units.

If, after reading this book showing the superiority of the Hydro-Stone System, you are not fully convinced that you want a proposition from us on your territory, we suggest that you make an appointment with us in Chicago to see the machines in operation, facings made, and, above all, see the many beautiful Hydro-Stone buildings which have been standing for a number of years.

There is no safer business in which one can engage than the manufacture of building material such as Hydro-Stone. The market is sure and safe. Loss of accounts and delay in payments are not to be taken into consideration as one takes advantage of the lien laws made to protect the seller of materials.

There is at all times a certain amount of building in progress, and the fact that Hydro-Stone can be used in the place of stone, brick, terra cotta or lumber is surety that no matter what kind of construction is being carried on, there will be an established market for this material.

Someone will own our license in your vicinity. Why not you?



Hydro-Stone Company

2nd Floor Insurance Exchange Building

Chicago

AVERY LIBRARY
COLUMBIA UNIVERSITY